IN THE CLAIMS:

A full listing of the claims, including any amendments made by this paper, follow below:

1. (Currently Amended) A method for fabricating a protective helmet for use in a firefighting environment, comprising the steps of:

providing a fiber-based filler;

mixing coarse ceramic particles into a thermoset resin, thereby providing a resin mixture wherein said ceramic particles have an average size of between about 3 microns and about 1000 microns to improve the heat reflectivity of said helmet while maintaining sufficient strength of said helmet;

impregnating the resin mixture into the fiber-based filler;

forming the impregnated fiber-based filler into a shape of a protective helmet having a generally continuous generally hemispherical bowl portion; and

after said impregnating step, curing the resin mixture.

2. (Previously Presented) The method of claim 1, wherein the coarse ceramic particles are created by a step of chopping the ceramic particles.

3. (Previously Presented) The method of claim 1, wherein the ceramic particles have an average size ranging from approximately 7 microns to approximately 8 microns to improve the heat reflectivity of said helmet while maintaining sufficient strength of said helmet.

4. (Previously Presented) The method of claim 3, wherein the mixing step includes the step of mixing an amount of the ceramic particles into the thermoset resin, wherein the amount of ceramic particles is approximately 10 to approximately 20 percent of the weight of the thermoset resin to improve the heat reflectivity of said helmet while maintaining sufficient

strength of said helmet.

5. (Previously Presented) The method of claim 1, wherein the curing step includes a step of providing an appropriate amount of pressure and temperature to the impregnated fiber-based filler, for a sufficient period of time, such that the resin mixture flows around the fibers of the fiber-based filler and bonds to the fibers of the fiber based filler.

6. (Previously Presented) The method of claim 5, wherein:

the appropriate temperature applied ranges from approximately 75 to approximately 350 F;

the appropriate pressure applied ranges from approximately 70psi to approximately 800psi; and

the sufficient period of time ranges from approximately 30 seconds to approximately 10 minutes.

7. (Previously Presented) The method of claim 6, wherein the appropriate temperature is approximately 128 F and the sufficient period of time is approximately 8 minutes.

8. (Previously Presented) The method of claim 1, wherein the thermoset resin is selected from a group consisting of polyesters, vinyl esters and epoxies and wherein a curing agent is added to the thermoset resin.

9. (Previously Presented) The method of claim 8, wherein the thermoset resin is a vinyl ester.

10. (Previously Presented) The method of claim 8, wherein the curing agent is a catalyst and the method includes the step of, prior to the impregnating step, mixing the curing agent with

either the thermoset resin or the resin mixture.

11. (Previously Presented) The method of claim 1, wherein said bowl portion is generally entirely made of fibers that are selected from a group consisting of glass fibers, aramid fibers, azol fibers and any combination of glass, aramid and azol fibers.

12. (Previously Presented) The method of claim 11, wherein the bowl portion includes a fiber-based sheeting.

13. (Previously Presented) The method of claim 12, wherein the bowl portion includes a fiber mesh or batting attached to at least one substrate of a woven or non-woven fiber sheet.

14. (Previously Presented) The method of claim 13, wherein the fiber-based sheeting is approximately .090 inches thick.

15. (Previously Presented) The method of claim 13, wherein a substantial portion of the fiber-based sheeting includes glass fibers.

16. (Previously Presented) The method of claim 12, wherein the fiber-based sheeting is assembled into an approximate shape of a helmet prior to the impregnating step.

17. (Currently Amended) A method for fabricating a protective helmet <u>for use in a firefighting environment</u>, comprising the steps of:

providing a male mold component;

providing a female mold component;

positioning a fiber-based filler between the male and female mold components, said fiber-based filler having a generally continuous generally hemispherical bowl portion;

mixing coarse ceramic particles into a thermoset resin, thereby providing a resin mixture;

impregnating the resin mixture into the fiber-based filler;

positioning the impregnated resin mixture between the male and female mold components;

curing the impregnated resin mixture by pressing the male and female mold components together for a curing time.

18. (Previously Presented) The method of claim 17, wherein the step of positioning the resin mixture between the male and female mold components includes a step of coating at least a portion of the fiber-based filler with at least a portion of the resin mixture.

19. (Previously Presented) The method of claim 18, further comprising the step of coating at least a portion of at least one of the male and female mold components with at least a portion of the resin mixture, prior to positioning the fiber-based filler between the male and female mold components.

20. (Previously Presented) The method of claim 17, wherein the coarse ceramic particles are created by a step of chopping a ceramic material.

21. (Previously Presented) The method of claim 17, wherein the ceramic particles have an average size ranging from approximately 7 microns to approximately 8 microns.

22. (Previously Presented) The method of claim 21, wherein the mixing step includes the step of mixing an amount of the ceramic particles into the thermoset resin, wherein the amount of ceramic particles is approximately 10 to approximately 20 percent of the weight of the thermoset resin.

23. (Currently Amended) A method for fabricating a protective helmet for use in a firefighting environment, comprising the steps of:

providing a male mold component;

providing a female mold component;

mixing coarse ceramic particles into a liquid thermoset resin, thereby providing a resin mixture;

coating at least a portion of a first one of the male and female mold components with a first portion of the liquid resin mixture;

after the coating step, positioning a fiber-based filler over the first portion of the resin mixture in the first mold component, said fiber-based filler having a generally continuous generally hemispherical bowl portion;

after the positioning step, applying a second portion of the liquid resin mixture over the fiber-based filler; and

curing the fiber-based filler and resin mixture together by pressing the male and female mold components together for a curing time.

24. (Previously Presented) The method of claim 23, wherein the coarse ceramic particles are created by a step of chopping a ceramic material.

25. (Previously Presented) The method of claim 24, wherein the ceramic particles have an average size ranging from approximately 7 microns to approximately 8 microns to improve the heat reflectivity of said helmet while maintaining sufficient strength of said helmet.

26. (Previously Presented) The method of claim 25, wherein the mixing step includes the step of mixing an amount of the ceramic particles into the thermoset resin, wherein the amount of ceramic particles is approximately 10 to approximately 20 percent of the weight of the

thermoset resin to improve the heat reflectivity of said helmet while maintaining sufficient strength of said helmet.

27. (Previously Presented) The method of claim 23, wherein the curing step includes a step of pressing the male and female mold components together at an appropriate amount of pressure and temperature, for a sufficient period of time, such that the resin mixture flows around the fibers of the fiber-based filler and bonds to the fibers of the fiber based filler.

28. (Previously Presented) The method of claim 27, wherein:

the appropriate temperature applied ranges from approximately 75 to approximately 350 F;

the appropriate pressure applied ranges from approximately 70psi to approximately 800psi; and

the sufficient period of time ranges from approximately 30 seconds to approximately 10 minutes.

29. (Previously Presented) The method of claim 28, wherein the appropriate temperature is approximately 128 F and the sufficient period of time is approximately 8 minutes.

30. (Previously Presented) The method of claim 23, wherein the thermoset resin is selected from a group consisting of polyesters, vinyl esters and epoxies and wherein a curing agent is added to the thermoset resin.

31. (Previously Presented) The method of claim 30, wherein the thermoset resin is a vinyl ester.

32. (Previously Presented) The method of claim 30, wherein the curing agent is a

catalyst and the method includes the step of, prior to the coating step, mixing the curing agent with either the thermoset resin or the resin mixture.

33. (Previously Presented) The method of claim 23, wherein the ~~fiber-base filler~~ bowl portion includes a fiber-based sheeting.

34. (Previously Presented) The method of claim ~~33~~ 23, wherein said bowl portion is generally entirely made of fibers that are selected from a group consisting of glass fibers, aramid fibers, azol fibers and any combination of glass, aramid and azol fibers.

35. (Previously Presented) The method of claim 33, wherein the bowl portion includes a fiber mesh or batting bonded to at least one substrate of a woven or non-woven fiber sheet.

36. (Currently Amended) A method for fabricating a protective helmet for use in a firefighting environment, comprising the steps of:

providing a male mold component;

providing a female mold component;

mixing ceramic particles into a thermoset resin, thereby providing a resin mixture;

coating at least a portion of a first one of the male and female mold components with a first portion of the resin mixture;

after the coating step, positioning a fiber-based filler over the first portion of the resin mixture in the first mold component, said fiber-based filler having a generally continuous generally hemispherical bowl portion;

after the positioning step, applying a second portion of the resin mixture over the fiber-based filler wherein at least one of said positioning or applying steps causes said fiber-based filler to be impregnated with said resin mixture; and

curing the impregnated resin mixture by pressing the male and female mold

components together for a curing time.

37. (Previously Presented) The method of claim 36, wherein the ceramic particles are chopped ceramic particles.

38-41. (Canceled)

42. (Currently Amended) A method for forming a relatively rigid, fiber composite object for use in a firefighting environment comprising the steps of:

providing a fiber-based filler;

mixing coarse ceramic particles into a thermoset resin, thereby providing a resin mixture;

impregnating the resin mixture into the fiber-based filler;

forming the fiber-based filler into a desired shape having a generally continuous generally hemispherical bowl portion; and

after said impregnating step curing the resin mixture to form a relatively rigid, fiber composite object.

43. (Previously Presented) The method of claim 42, wherein the coarse ceramic particles are created by a step of chopping a ceramic material.

44. (Previously Presented) The method of claim 42, wherein the ceramic particles have an average size ranging from approximately 7 microns to approximately 8 microns to improve the heat reflectivity of said helmet while maintaining sufficient strength of said helmet.

45. (Previously Presented) The method of claim 42, wherein the mixing step includes the step of mixing an amount of the ceramic particles into the thermoset resin, wherein the

amount of ceramic particles is approximately 10 to approximately 20 percent of the weight of the thermoset resin to improve the heat reflectivity of said helmet while maintaining sufficient strength of said helmet.

46. (Previously Presented) The method of claim 42, wherein the curing step includes a step of providing an appropriate amount of pressure and temperature to the impregnated fiber-based filler, for a sufficient period of time, such that the resin mixture flows around the fibers of the fiber-based filler and bonds to the fibers of the fiber based filler.

47. (Previously Presented) The method of claim 46, wherein:

the appropriate temperature applied ranges from approximately 75 to approximately 350 F;

the appropriate pressure applied ranges from approximately 70psi to approximately 800psi; and

the sufficient period of time ranges from approximately 30 seconds to approximately 10 minutes.

48. (Previously Presented) The method of claim 47, wherein the appropriate temperature is approximately 128 F and the sufficient period of time is approximately 8 minutes.

49. (Previously Presented) The method of claim 42, wherein the thermoset resin is selected from a group consisting of polyesters, vinyl esters and epoxies and wherein a curing agent is added to the thermoset resin.

50. (Previously Presented) The method of claim 49, wherein the thermoset resin is a vinyl ester.

51. (Previously Presented) The method of claim 49, wherein the curing agent is a catalyst and the method includes the step of, prior to the impregnating step, mixing the curing agent into either the thermoset resin or the resin mixture.

52. (Previously Presented) The method of claim 42, wherein said bowl portion is generally entirely made of fibers that are selected from a group consisting of glass fibers, aramid fibers, azol fibers and any combination of glass, aramid and azol fibers.

53. (Previously Presented) The method of claim 52, wherein the bowl portion includes a fiber-based sheeting.

54. (Previously Presented) The method of claim 53, wherein the bowl portion includes a fiber mesh or batting bonded to at least one substrate of a woven or non-woven fiber sheet.

55. (Previously Presented) The method of claim 54, wherein a substantial portion of the bowl portion includes glass fibers.

56. (Previously Presented) The method of claim 1 wherein said curing step includes curing said resin mixture until said helmet is generally rigid.

57. (Previously Presented) The method of claim 1 wherein said providing, mixing, impregnating, forming and curing step are carried out such that the protective helmet meets National Fire Protection Association Standards 1971-2000 top impact, acceleration impact and penetration resistance tests.

58-64. (Canceled)

65. (Previously Presented) The method of claim 1 wherein said thermoset resin is in a liquid form during said mixing step, and wherein said resin mixture is in a liquid form during said impregnating step.

66. (Previously Presented) The method of claim 17 wherein said bowl portion is generally entirely made of fibers that are selected from a group consisting of glass fibers, aramid fibers, azol fibers and any combination of glass, aramid and azol fibers.

67. (Previously Presented) The method of claim 42 wherein said forming step takes place after said impregnating step.

68. (New) The method of claim 1 wherein the recited steps are carried out to provide a helmet with relatively high heat reflectivity.

69. (New) The method of claim 17 wherein the recited steps are carried out to provide a helmet with relatively high heat reflectivity.

70. (New) The method of claim 23 wherein the recited steps are carried out to provide a helmet with relatively high heat reflectivity.

71. (New) The method of claim 36 wherein the recited steps are carried out to provide a helmet with relatively high heat reflectivity.

72. (New) The method of claim 42 wherein the recited steps are carried out to provide a helmet with relatively high heat reflectivity.

73. (New) The method of claim 42 further comprising the step of coupling a set of

reinforcing ribs to said generally continuous generally hemispherical bowl portion.